4.12 HAZARDOUS MATERIALS

This section describes existing contamination identified in the proposed Project area and also identifies ways in which hazardous materials associated with the Project could be accidentally released, whereupon they could adversely affect other resources such as biologic resources, water quality, or public safety. This section also addresses issues raised during public scoping about spills and hazardous material management. Mitigation is then proposed, and the likelihood of hazardous material impacts from the proposed alternatives is evaluated relative to the Project.

This section does not discuss potential impacts from accidental releases of liquefied natural gas (LNG), natural gas, or the odorant that will be added to the natural gas once it has been piped onshore. These impacts are discussed in Section 4.2, "Public Safety," and Section 4.6, "Air Quality." Discussion of the effects of hazardous materials or oil releases to marine biota are discussed in Section 4.7, "Biological Resources - Marine," and the effects of releases to the terrestrial environment are discussed in Section 4.8, "Biological Resources - Terrestrial." Section 4.18, "Water Quality and Sediments" addresses potential changes to water quality that might arise from a release of hazardous materials.

4.12.1 Environmental Setting

Hazardous materials that may be used during construction or operation of the floating storage and regasification unit (FSRU) and its associated subsea and onshore pipelines are described in Section 2, "Project Description." Potential impacts associated with accidental releases of these materials depend on the quantity and type of container, the location where it is used, the toxicity or other hazardous characteristics of the material, and whether it is transported, stored, and used in a solid, liquid, or gaseous form.

This section also discusses the potential for encountering hazardous contaminants in the surface or subsurface during Project activities, based on a review of information regarding the locations of known methane and hydrocarbon seeps in the Project area (California Department of Conservation [CDOC] 2004), and the results of a database search for known or suspected contaminated sites. These environmental databases, described in Table 4.12-1, document known locations where an ongoing release, past release, known contamination, or known remedial program is located within 0.5 mile (0.8 kilometer [km]) of the proposed Project and its alternatives. The Applicant conducted soil sampling at the proposed shoreline crossing to supplement these data.

Table 4.12-1 Inventory of Potential Hazardous Waste Sites Along the Proposed and Alternative Routes

	NPL	Proposed NPL	CERCLIS	CERCLIS-NFRAP	Corracts	ERNS	Cal-Sites	CHMIRS	Cortese	Notify 65	LUST	VCP	HMIRS	REF
Arnold Road Shore Crossing/ Arnold Road Pipeline	0	0	0	0	0	0	0	0	1	0	1	0	0	0
Point Mugu Shore Crossing/ Casper Road Pipeline	0	0	0	0	0	0	0	0	1	0	2	0	0	0
Center Road Pipeline	0	0	0	0	0	3	2	0	5	0	4	0	0	0
Center Road Pipeline Alternative 1	0	0	1	2	0	8	10	0	28	0	34	0	2	2
Center Road Pipeline Alternative 2	0	0	0	0	0	3	5	0	11	0	11	0	0	0
Line 225 Pipeline Loop	0	0	2	3	0	11	0	10	19	1	17	1	0	1
Line 225 Pipeline Loop Alternative	0	0	0	1	1	1	0	0	2	0	3	0	0	0

Key:

NPL	National Priorities List
Proposed NPL	Proposed National Priorities Sites List
CERCLIS	The Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) contains data on potentially hazardous waste sites that have been reported to the United States Environmental Protection Agency (USEPA) pursuant to Section 103 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). CERCLIS contains sites proposed or on the NPL and sites in the screening and assessment phase for possible inclusion on the NPL.
CERCLIS-NFRAP	As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund Action or NPL consideration.
CORRACTS	A list of handlers with Resource Conservation and Recovery Act (RCRA) Corrective Action Activity. This report shows which nationally defined corrective action core events have occurred for every handler that has had corrective action activity.
ERNS	The Emergency Response Notification System records and stores information on reported releases of oil and hazardous substances. Source: USEPA.
CAL-SITES	Formerly known as ASPIS, this database contains both known and potential hazardous substances site. Source: California Department of Toxic Substances Control.
CHMIRS	The California Hazardous Material Incident Report System contains information on reported hazardous material incidents (i.e., accidental releases or spills). Source: California Office of Emergency Services.

Table 4.12-1 Inventory of Potential Hazardous Waste Sites Along the Proposed and Alternative Routes

CORTESE	This database identifies public drinking water wells with detectable levels of contamination, hazardous substance sites selected for remedial action, sites with known toxic material identified through the abandoned site assessment program, sites with underground storage tanks (USTs) having a reportable release, and all solid waste disposal facilities from which there is known migration. Source: California Environmental Protection Agency (CalEPA)/Office of Emergency Information.
NOTIFY 65	Notify 65 records contain facility notifications about any release that could impact drinking water and thereby expose the public to a potential health risk. Source: State Water Resources Control Board's Proposition 65 database.
LUST	The Leaking Underground Storage Tank (LUST) Incident Reports contain an inventory of reported leaking underground storage tank incidents. Source: State Water Resources Control Board's Leaking Underground Storage Tank Information System.
VCP	Contains low threat level properties with either confirmed or unconfirmed releases; the Project proponents have requested that the California Department of Toxic Substances Control (DTSC) oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.
HMIRS	The Hazardous Materials Incident Report System contains hazardous material spill incidents reported to the Department of Transportation. Source: USEPA.
REF	This category contains properties where contamination has not been confirmed and which were determined to not require direct DTSC Site Mitigation Program action or oversight. Accordingly, these sites have been referred to another state or local regulatory agency.

The Environmental Impact Statement/Environmental Impact Report (EIS/EIR) Project Team did not identify any releases of hazardous substances from permitted hazardous material or waste-handling facilities present along the pipeline routes; these facilities are regulated by State or Federal agencies and any known releases of hazardous materials at these sites would have been identified as part of the database search. The presence of an UST on a site was not considered unless it also appeared in the LUST database. Any locations where hazardous materials are only stored or used within a facility, but are not known to have been released, will not affect Project construction or operations.

4.12.1.1 FSRU and Subsea Pipeline

Hazardous materials, including radioactive and X-ray sources for non-destructive testing of pipeline and equipment welds, will be stored and used during construction and operation of the FSRU and subsea pipeline and will be transported by road and by vessel to reach these offshore locations.

No known ocean dumpsites that might contain waste hazardous materials have been identified within 0.43 nautical mile (NM) (0.5 mile or 0.8 km) of the proposed FSRU or subsea pipeline route. The ocean dumpsites nearest to the FSRU and subsea pipeline are:

- A chemical munitions dumping area (no longer in use) approximately 22.6 NM (26 miles or 41.8 km) southwest of the FSRU mooring point; and
- A dredged material dumpsite located approximately 2.3 NM (2.6 miles or 4.2 km) west of pipeline Milepost (MP) 18.

Although there are no known ocean dumpsites along the route (NOAA 2003a), approximately 12.2 NM (14 miles or 22.6 km) of the subsea pipeline (i.e., from MP 3 to MP 17) will lie within the Point Mugu Sea Range. Unexploded ordnance, drones, or other debris from missile testing may be located near or within the proposed subsea pipeline corridor.

Sampling and laboratory analysis conducted by the Applicant detected no contaminants in sediment samples collected from the proposed horizontal directional drilling (HDD) exit hole location.

Methane and hydrocarbon seeps are found throughout the southern California coastal area, including off shore. No known natural methane or hydrocarbon seeps are located along the subsea pipeline routes.

4.12.1.2 Onshore Pipeline Routes

Hazardous materials in types and quantities typical of similar construction projects, including radioactive and X-ray sources for non-destructive testing of pipeline and equipment welds, will be transported by road and stored and used during construction and operation of the odorization facility and onshore pipelines. Pipeline construction activities onshore also have the potential to accidentally release hazardous materials if contaminated surface and subsurface soils and groundwater are encountered during excavation.

Although oil and gas seeps have been identified in Ventura and Los Angeles counties, no known natural methane or hydrocarbon seeps are located along the onshore pipeline routes. A number of oil seeps have been identified in the general vicinity of the Line 225 Pipeline Route and its alternative, however. In addition, the northern terminus of the Line 225 Pipeline is at the Honor Rancho underground natural gas storage facility, which is owned and operated by Southern California Gas Company (SoCalGas). Other than making a connection to this pipeline, the proposed Project does not include making any changes or connections directly to this depleted oil and gas reservoir (BHP Billiton LNG International, Inc. [BHPB] 2004).

Other potential contaminated sites were identified using database search results. Table 4.12-1 summarizes the results of the database search and lists the identified sites. In some cases, the Environmental Data Resources (EDR) search reports were conducted for routes that have since been changed or were conducted for areas slightly offset from the identified routes. However, no additional sites were identified through searches of publicly available environmental databases. The results of the searches are identified in the discussion below.

There were no NPL or NPL-proposed sites identified along the pipeline routes. However, some sites have known or suspected contamination in soil or groundwater.

Center Road Pipeline Route

The database search identified eight sites located within 0.5 mile (0.8 km) of the proposed Center Road Pipeline, with 52 sites along Alternative 1 and 17 sites along Alternative 2. The total number of sites for the proposed and alternate routes is less than the sum of these three numbers, as some sites are counted more than once where the sections of the proposed and alternate routes are on the same alignment.

Due to alterations in the route or conducting the search for an area slightly offset from the route, the database search summarized in the EDR report may not include all sites within 0.5 mile (0.8 km) for parts of the route along Hueneme Road, Naumann Road, Etting Road, Hailes Road, and Del Norte Boulevard. Additional searches using publicly available databases were subsequently conducted and no additional sites were identified.

Two sites, including the Reliant Energy Ormond Beach Generating Station and the collocated Pennington Manufacturing and Borla Performance Industries, are located on Edison Drive between MPs 0 and 1. The other sites occur between MPs 12.5 and 13.8.

There are 10 known active and closed solid waste disposal sites within the City of Oxnard, the closest of which is the Arnold Road Dump, located at the end of Arnold Road near the Pacific Ocean, approximately 0.5 mile (0.8 km) from the Reliant Energy Ormond Beach Generation Station Shore Crossing. This location was closed in 1960 (Solid Waste Information System [SWIS] 2004).

In addition to the sites located within 0.5 mile of the Project, the Halaco metal recycling facility is located on Perkins Road in Oxnard, approximately one mile west of the Reliant Energy Ormond Beach Generating Station. Because the site is well off the Project route, it is not discussed further in this document.

Line 225 Pipeline Loop

The environmental database search identified 36 sites within 0.5 mile (0.8 km) of the Line 225 Pipeline Loop, with four sites identified along the Line 225 Pipeline Loop Alternative. The sites are generally spread along the entire length of the proposed route in Santa Clarita.

Because of alterations in the route or because the search was conducted in an area slightly offset from the route, the EDR report may not include all sites within 0.5 mile (0.8 km) for parts of the proposed Line 225 Pipeline Loop route along McBean Parkway, Scott Avenue, and Stanford Avenue. Additional searches using publicly available databases were subsequently conducted and no additional sites were identified.

One site with known contamination of surface and subsurface soils and groundwater that was not identified in the database search is the former Whittaker-Bermite Facility,

located at 22116 West Soledad Canyon Road in Santa Clarita. In June 2004, the California DTSC issued a Consent Order to Whittaker Company to clean up this site (DTSC 2004). The alignment of the Line 225 Pipeline Loop from approximately MP 0.35 to MP 1.0 would follow the southern edge of Operable Unit 10 South (OU 10s) of this cleanup site and OU 2 from about MP 1.0 to MP 1.35 (DTSC 2004a). Potential contaminants of concern for soils from the surface to a depth of 200 feet (61 meters [m]) below ground surface for OU 2 include perchlorate, volatile organic compounds, and unspecified metals. OU 2 is expected to receive certification that the site has been cleaned up to the required level by October 2006, prior to pipeline construction. OU 7 encompasses all the groundwater throughout the site and area where soil contamination was identified below 200 feet (61 m) and is expected to be certified as cleaned up by 2010. The main contaminants of concern in the groundwater are perchlorate and volatile organic compounds. OU 10s is an area of the site where no specific contaminant issues have been identified. Unexploded ordnance (UXO) is a site-wide concern for this location, and UXO surveys are planned for at least some of the site areas. (DTSC 2004a)

Four known active and closed solid waste disposal sites are located near the proposed pipeline route within the City of Santa Clarita, the closest of which is the Los Angeles County Public Works Road Department landfill (SWIS No. 19-AA-0300), which is located approximately 0.85 mile (1.4 km) south of MP 2.0 (SWIS 2004).

4.12.2 Regulatory Setting

The principal Federal regulatory agency is the United States Environmental Protection Agency (USEPA). Key Federal, State, and local regulations pertaining to hazardous materials associated with the Project are provided in Table 4.12-2.

Table 4.12-2 Major Laws, Regulatory Requirements, and Plans for Hazardous Materials

Law/Regulation/Plan/ Agency	Key Elements and Thresholds; Applicable Permits
Hazardous Waste	
Resource Conservation and Recovery Act (RCRA) – 40 CFR Parts 240-299 - *USEPA*	• Establishes system for controlling hazardous waste from its point of origin to its final disposal.
California Coastal Act Chapter 3 Article 4 Section 30232 - *California Coastal Commission (CCC)*	• Protection against the spillage of crude oil, gas, petroleum, products, or hazardous substances shall be provided in relation to any development or transportation of such materials. Effective containment and cleanup facilities and procedures shall be provided for accidental spills that do occur.

Table 4.12-2 Major Laws, Regulatory Requirements, and Plans for Hazardous Materials

Law/Regulation/Plan/ Agency	Key Elements and Thresholds; Applicable Permits
Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) - *USEPA*	• Establishes prohibitions and requirements concerning closed and abandoned hazardous waste sites. • Provides for liability of persons responsible for releases of hazardous waste at these sites. • Establishes a trust fund to provide for cleanup when no responsible party can be identified.
National Oil and Hazardous Substances Pollution Contingency Plan (NCP) - *USEPA*	• Outlines requirements for responding to both oil spills and releases of hazardous substances. • Provides for comprehensive system for reporting, spill containment, and cleanup.
Clean Water Act (CWA) - *USEPA*	• Establishes basic structure for regulating discharges of pollutants into the waters of the United States. • Establishes pollution control programs such as setting wastewater standards for industry. • Sets water quality standards for all contaminants in surface waters. • Makes it unlawful for any person to discharge any pollutant from a point source into navigable waters without a permit.
Spill Prevention, Control, and Countermeasures Plan (SPCC) – 40 Code of Federal Regulations (CFR) Part 112 - *USEPA*	• Requires facilities that store, handle, or produce significant quantities of hazardous material to prepare plan to ensure that containment and countermeasures are in place to prevent release of hazardous materials to the environment.
Superfund Amendments and Reauthorization Act (SARA) - *USEPA*	• Establishes a nationwide emergency planning and response program and reporting requirements for facilities that store, handle, or produce significant quantities of hazardous materials. • Identifies requirements for planning, reporting, and notification concerning hazardous materials.
California Harbors and Navigation Code (CHNC) - *California Dept. of Boating and Waterways*	• Regulates discharges from vessels within territorial water of the State of California to prevent adverse impacts to the marine environment.
Hazardous Waste Control Act (HWCA) (Title 26 California Code of Regulations [CCR]) - *CalEPA*	• Outlines requirements for proper management of hazardous materials.

Table 4.12-2 Major Laws, Regulatory Requirements, and Plans for Hazardous Materials

Law/Regulation/Plan/ Agency	Key Elements and Thresholds; Applicable Permits
Safety	
Occupational Safety and Health Standards (Title 29 CFR Part 1910 and 1926 - *OSHA*	• Provides regulations for safety in the workplace. • Provides regulations for construction safety.
International Convention on Standards of Training, Certification, and Watchkeeping (STCW 78) - *International Maritime Organization (IMO)*	• Sets forth training, certification, and qualification requirements for senior ship personnel.
Convention on the International Regulations for Preventing Collisions at Sea (1972) - *IMO*	• Establishes "rules of the road" such as rights-of-way, safe speed, actions to avoid collision, and procedures to observe in narrow channels and restricted visibility.
Title 46 United States Code (USC) Subtitle II Part B, Inspection and Regulation of Vessels - *U.S. Coast Guard*	• All vessels operating offshore, including those under foreign registration, are subject to requirements applicable to vessel construction, condition, and operation. • Allows for inspections to verify that vessels comply with applicable international conventions and with all United States laws and regulations.
Title 8, CCR Chapters 3, 4, and 7, Occupational and Industrial Safety - *CalOSHA*	• Establishes requirements for safe working conditions and safety-related reporting in the State.
Title 17, CCR, Div. 1, Chapter 5, SubChapter 4, Radiation	• Establishes requirements for licensing and handling of radiological and X-ray sources for industrial non-destructive testing (incorporates by reference Federal regulations contained in 10 CFR 20 with just a few exceptions).
Oil Spills	
Title 14, CCR, Chapter 3 - *CalEPA*	• Requires specific oil spill prevention measures for non-tank vessels of more than 300 gross tons.
International Convention of Pollution from Ships, as modified by Protocol of 1978 (MARPOL 73/78) - *IMO*	• Regulates pollution and spills from ships. • Contains measures to prevent accidental and operational causes of marine pollution.

Table 4.12-2 Major Laws, Regulatory Requirements, and Plans for Hazardous Materials

Law/Regulation/Plan/ Agency	Key Elements and Thresholds; Applicable Permits
CalEPA - California Environmental Protection Agency CalOSHA - California Department of Occupational Health IMO - International Maritime Organization OSHA - Occupational Safety and Health Administration USEPA - United States Environmental Protection Agency	

4.12.3 Significance Criteria

An impact would be considered significant if Project construction or operation would:

- Increase the risk that an uncontrolled release of oil would occur;
- Use, store, or dispose of hazardous materials in a manner that results in a release to the marine or terrestrial environment or creates a substantial risk to human health;
- Result in soil contamination, including from flammable or toxic gases, at levels exceeding Federal, State, and local hazardous waste limits established by 40 CFR Part 261 and Title 22 CCR 66261.21, 66261.22, 66261.23, and 66261.24;
- Mobilize contaminants currently existing in the soil, creating potential pathways of exposure to humans or wildlife that would result in exposure to contaminants at levels that would be expected to be harmful; or
- Contaminate soils or water within the Project area and, as a result, expose workers to contaminated or hazardous materials during pipeline construction activities at levels in excess of those permitted by California Occupational Safety and Health Agency (CalOSHA) in CCR Title 8 and the Federal OSHA in Title 29 CFR Part 1910, or potential exposure of members of the public to direct or indirect contact with hazardous materials from Project construction or operations.

4.12.4 Impact Analysis and Mitigation

Potential impacts and mitigation measures proposed for impacts are discussed below. A summary of potential impacts and the proposed mitigation measures is provided in Table 4.12-3. Applicant-proposed mitigation measures (AMM) and agency recommended mitigation measures (MM) are defined in Section 4.1.

Table 4.12-3 Summary of Hazardous Materials Impacts and Mitigation Measures

Impact	Mitigation Measure(s)
HAZMAT-1: Marine activities associated with site preparation, transportation, and installation of the mooring system, FSRU, and subsea pipeline could result in a temporary hazardous materials or oil spill to marine waters (Class II).	**AMM HAZ-1a. Develop and Implement a Curtailment Plan.** Develop and implement critical operations and curtailment plan. **AMM HAZ-1b. Absorbent Materials**. Maintain onboard sufficient quantities of absorbent materials to contain and cleanup small spills.

Table 4.12-3 Summary of Hazardous Materials Impacts and Mitigation Measures

Impact	Mitigation Measure(s)
	MM HAZ-1c. Material Safety Data Sheets. Maintain Material Safety Data Sheets (MSDS) for all hazardous materials stored onboard.
HAZMAT-2: Improper handling of hazardous materials or leaks in containers on the FSRU could temporarily result in a release to the marine environment or exposure of workers or the public (Class III).	**AMM HAZ-2a. Manage Used Oil in Accordance with USEPA and State Requirements.** Hazardous materials to be managed in accordance with facility-specific SPCC Plan; materials to be stored within secondary containment; FSRU to maintain sufficient quantities of absorbent materials to contain and cleanup small spills; personnel to be trained in control and cleanup of spills; materials to be stored in Department of Transportation (DOT)-approved containers. **AMM HAZ-2b. Storage of Hazardous Materials.** Hazardous materials to be stored in manner specified by manufacturer and in accordance with Federal regulations and internationally recognized codes and standards.
HAZMAT-3: Construction activities could unearth existing contaminated sites onshore and offshore, causing potential temporary health hazards to construction workers, the public, and marine and terrestrial ecology (Class II).	**AMM HAZ-3a. Follow Standard Industry Practices.** The Applicant would follow standard industry practices and OSHA regulations to limit access to construction area by unauthorized personnel. **AMM HAZ-3b. Provide OSHA Training**. Construction contractor to provide workers trained in accordance with OSHA Hazardous Waste Operations requirements; workers to be trained in recognition and response to potential hazards. **AMM HAZ-3c. Prepare a Project-specific Health and Safety Plan**. Prepare project-specific health and safety plan to include identification of possible hazardous materials; personnel working in contaminated areas to be trained for handing hazardous wastes. **AMM HAZ-3d. Prevent Migration of Contaminated Soils**. Follow standard industry practices and OSHA regulations to prevent migration of contaminated soils/material off site. **MM HAZ-3e. Cleanup of Soil and Groundwater.** Coordinate with DTSC to ensure OU-2 is certified clean, identify status of groundwater remediation for OU-7, and determine whether additional surveys or sampling necessary for areas to be disturbed by pipeline construction.
HAZMAT-4: Construction in the pipeline right-of-way (ROW) could release methane or other flammable or toxic gases from nearby landfills, causing potential health hazards to construction workers and the public; however, this potential impact is unlikely (Class III).	None.
HAZMAT-5: Activities associated with onshore	**AMM HAZ-5a. Prepared Spill Prevention**

Table 4.12-3 Summary of Hazardous Materials Impacts and Mitigation Measures

Impact	Mitigation Measure(s)
construction and drilling could result in a temporary accidental spill of hazardous materials or oil (Class II).	**Countermeasure and Control Plan.** Train workers to recognize and respond to spills and notify regulatory agencies; maintain emergency spill kit. **AMM HAZ-5b. Use Best Management Practices.** Store hazardous materials in appropriate containers within secondary containment, in fenced/secure areas, and protected from exposure; incompatible materials to be segregated; dispose of wastes in accordance with federal and state regulations. **AMM HAZ-5c. Appropriate Disposal.** Place absorbent materials or drip pans beneath vehicles and equipment prior to maintenance or refueling; materials drained from equipment to be collected in spill-proof containers and disposed at appropriate disposal or recycling facility. **AMM HAZ-5d. Maintain Spill Kits.** The Applicant would keep a proper spill kit accessible at each construction location. **MM HAZ-5e. Maintain Equipment.** Maintain equipment in good operating condition; remove or repair equipment with chronic/continuous leaks.
HAZMAT-6: HDD could result in a temporary a release of drilling muds from the borehole at a fracture in the ground (Class II).	**MM WAT-5a. HDD Contingency Plan.** **MM WAT-5b. Strategic Location for Drilling Muds and Cuttings Pit.**
HAZMAT-7: During onshore construction, operations, and maintenance activities, accidents or improper handling, transport, and storage of hazardous materials could result in spills, temporarily exposing workers or the public to hazardous materials (Class III).	The following also apply here: **AMM HAZ-5a. Spill Prevention Countermeasure and Control Plan.** **AMM HAZ-5b. Use Best Management Practices.** **AMM HAZ-5c. Appropriate Disposal.** **AMM HAZ-5d. Maintain Spill Kits.** **MM HAZ-5e. Maintain Equipment.**
HAZMAT-8: Offshore pipeline installation and onshore pipeline construction activities could encounter UXO, causing an explosion that, although temporary in nature, could result in serious injuries or fatalities to workers or the public, and—for offshore locations—serious injuries or fatalities to marine life from subsurface blast pressures (Class II).	**MM HAZ-8a. Surveys.** In offshore areas along pipeline route, conduct surveys for presence of Unexploded Ordinance. **MM HAZ-8b. Coordination with the California Department of Toxic Substances Control.** For parts of Line 225 Loop on/near Whittacker-Bermite site, coordinate with DTSC.

1

Impact HAZMAT-1: Potential Hazardous Materials Spills due to Offshore Construction

Marine activities associated with site preparation, transportation, and installation of the mooring system, FSRU, and subsea pipeline could result in a temporary hazardous materials or oil spill to marine waters (Class II).

During construction, one dynamically positioned pipe-laying vessel (DPV) would operate offshore continually for the period of pipeline construction. In addition, four pipe barges would make four trips per day to bring pipe and supplies to the DPV. Some of these vessels would carry fuel to resupply the construction vessels or other potentially hazardous materials (e.g., lubricants, paint, solvents, etc.) needed during construction. Leaks from storage tank(s) or vessel collision could result in release of fuel or other materials to marine waters.

A Shipboard Oil Pollution Emergency Plan (SOPEP) that complies with the International Convention for the Prevention of Pollution from Ships (MARPOL) Annex 1 would be required for all Project vessels entering the Project area. Compliance with the SOPEP would reduce the potential for a spill to occur and would ensure that the vessel operators could respond to one.

The potential for an accidental spill of diesel fuel, and the fuel container size were raised as issues during public scoping meetings. Diesel fuel is anticipated to be delivered by an anchor handling tug supply boat about once a month. The fuel will be provided in several sealed containers of approximately 350 gallons (1.3 cubic meters [m^3]) each, although the size may change depending on what is commercially available during Project construction and operation. Information regarding the numbers of supply ships transiting to the FSRU is discussed in Section 4.3, "Marine Traffic." Diesel fuel must be managed in accordance with USEPA and State of California requirements, including a facility-specific SPCC plan as required for Deepwater Port Act (DWPA) Facilities under 40 CFR 112.1(a)(1). The SPCC plan outlines the emergency procedures, operating procedures, employee training, and engineering controls (e.g., secondary containment) necessary to prevent spills, overflows, or other incidents that may discharge hazardous materials to the environment.

The applicant has incorporated the following into the Project:

AMM HAZ-1a. **Develop and Implement a Curtailment Plan**. The Applicant would develop and implement a critical operations and curtailment plan to delineate and maintain safe operating conditions aboard the vessels. The plan would specify the appropriate wind and sea conditions for operation of the vessel, refer to appropriate personnel and evaluation procedures, and require adherence to the ship's oil spill response plan. The Plan would be submitted to United States Coast Guard (USCG) and California State Lands Commission (CSLC) 60 days prior to initiation of construction.

AMM HAZ-1b. **Absorbent Materials**. The Applicant's Project vessel(s) would have sufficient quantities of absorbent materials stored onboard and accessible as necessary to contain and clean up any small spill or sheen on the water surface.

Mitigation Measures for Impact HAZ-1: Potential Hazardous Materials Spills due to Offshore Construction

MM HAZ-1c. **Material Safety Data Sheets**. MSDSs shall be available for all hazardous material stored onboard and accessible to the crew. They shall be available to the USCG and USEPA upon request.

With the implementation of this mitigation measure, these impacts would be less than significant.

Impact HAZMAT-2: Potential Hazardous Materials Spills due to Offshore Operations

Improper handling of hazardous materials or leaks in containers on the FSRU could temporarily result in a release to the marine environment or exposure of workers or the public (Class III).

As described in Section 2, "Project Description," the FSRU would have two single-wall steel tanks containing 264,000 gallons (1,000 m^3) of diesel fuel with secondary containment consisting of a drip tray with extended walls under each tank. The tanks would be located aft of the FSRU under the deck area on level four. Other materials that would be stored and used on the FSRU include urea, lubricating oils, and small quantities of various paints, solvents, and other hazardous materials. Dry urea would be delivered in a special container to the FSRU on a supply boat and stored on the FSRU in a dry contained area. Lubricating oil would be stored onboard in 55-gallon (0.2 m^3) drums or 350-gallon (1.3 m^3) totes.

Supply ships carrying hazardous materials and wastes would make regular trips to and from the FSRU. Hazardous materials may include the materials described above as well as human waste. Potential impacts associated with supply ship transits are discussed in Section 4.3, "Marine Traffic."

If these materials were handled improperly or if containers leaked, workers or the public could be exposed to hazardous materials. The worst-case scenario would be a rupture of the diesel tanks. However, materials stored on the FSRU are unlikely to leak into the marine environment because they would be stored in containers with secondary containment and would be protected within the double hull of the FSRU. However, workers onboard could be exposed. In addition, if an accident occurred while hazardous materials were being transported or transferred to and from the FSRU, or if they were mishandled, a spill or leak could occur, exposing workers, possibly the public, and potentially the marine environment.

Should a spill of diesel fuel or other hazardous material occur, the USCG would have jurisdiction over response and cleanup operations.

The applicant has incorporated the following into the proposed Project:

AMM HAZ-2a. **Manage Used Oil in Accordance with USEPA and State Requirements.** The Applicant would return used oil to shore in the same labeled and DOT-approved containers used to provide the replacement oil, which would ensure that appropriate containers would be used for all oil in storage and in transport. Used oil would be managed, disposed of, or recycled in accordance with USEPA and State of California requirements. All oil would be managed in accordance with the facility-specific SPCC plan, which would ensure that adequate containment (e.g., bermed areas or spill pallets for drum storage) would be provided to contain accidental spills, that adequate spill response equipment and absorbents will be readily available, and that personnel will be properly trained in how to control and clean up any spills.

AMM HAZ-2b. **Storage of Hazardous Materials.** The Applicant would store paint, solvents, urea, and any other hazardous materials in the manner specified by the manufacturer and in Federal regulations and in accordance with Federal regulations that require compliance with nationally and internationally recognized codes and standards.

Mitigation Measures for Impact HAZ-2: Potential Hazardous Materials Spills due to Offshore Operations

With the implementation of these measures, the impacts of potential hazardous material and oil spills would be less than significant.

Impact HAZMAT-3: Release of Existing Contaminants from Sediments, Soils, or Groundwater

Construction activities could unearth existing contaminated sites onshore and offshore, causing potential temporary health hazards to construction workers, the public, and marine and terrestrial ecology (Class II).

The alignment of the Line 225 Pipeline Loop from approximately MP 0.35 to MP 1.0 would follow the southern edge of Operable Unit 10 South (OU 10s) of the Whittaker-Bermite cleanup site and OU 2 from about MP 1.0 to MP 1.35 (DTSC 2004a). Potential contaminants of concern for soils from the surface to a depth of 200 feet (61 m) below ground surface for OU 2 include perchlorate, volatile organic compounds, and unspecified metals. OU 2 is expected to receive certification that the site has been cleaned up to the required level by October 2006. OU 7 encompasses all the groundwater throughout the site and area where soil contamination was identified below 200 feet (61 m) and is expected to be certified as cleaned up by 2010. The main

contaminants of concern in the groundwater are perchlorate and volatile organic compounds. No specific contaminant issues have been identified in OU 10s.

As previously discussed, there are many potential hazardous material or waste sites within 0.5 mile (0.8 km) of the proposed Center Road Pipeline and Line 225 Pipeline Loop routes, and oil seeps have been identified in the general area near the Line 225 Pipeline Loop. Construction crews could potentially encounter contaminated soil or water during trenching and drilling operations. In addition, it is possible that an unknown disposal site may be encountered. When any potential contamination is uncovered, there is the potential that members of the public could be exposed through direct contact or inhalation of contaminated materials. Adverse health effects, however, are unlikely to occur from a short-term exposure to contaminated soils or waters.

The offshore pipeline would be laid on the seafloor except where HDD would take place. The pipeline route does not pass within 0.5 mile (0.8 km) of any known ocean dumpsites. The Applicant has collected sediment samples from the HDD exit hole location and there were no contaminants detected. Therefore, it is unlikely that any contaminated sediments would be unearthed during construction offshore. Therefore no impacts would be expected; however, should unanticipated contamination be identified during construction, the following mitigations are identified.

The Applicant has incorporated the following into the project:

AMM HAZ-3a. **Follow Standard Industry Practices.** The Applicant would follow standard industry practices and OSHA regulations to prevent unauthorized people from having access to the construction area, including fencing or other temporary barriers. This would prevent members of the public from coming into direct contact with these materials or contaminants on the Project site.

AMM HAZ-3b. **Provide OSHA Training**. The Applicant would handle unexpected discoveries of buried hazardous materials or contaminated soil or groundwater, by requiring that the construction contractor have workers available who are trained in accordance with OSHA Hazardous Waste Operations (HAZWOPER) requirements contained in 29 CFR 1910.120, which would ensure that workers have been trained to recognize these potential hazards and respond appropriately.

AMM HAZ-3c. **Prepare a Project-specific Health and Safety Plan**. A Project-specific health and safety plan would be prepared that details steps to be taken should discolored soil or unusual odors be detected. If discolored soil or odors are encountered, work in the area would cease and the Project Safety Officer would be notified. The cause of the discoloration and/or odor would be determined and, if necessary, any contamination would be removed before work in the area resumes. Personnel working in identified contaminated sites

must be trained for handling hazardous wastes per 29 CFR 1910.120.

AMM HAZ-3d. **Prevent Migration of Contaminated Soils**. If buried hazardous materials or contamination are discovered, the Applicant would follow standard industry practices and OSHA regulations to prevent migration of contaminated soils or other materials off site. This would include, for example, covering an area of contaminated soil with tarps to prevent contaminated dust from blowing off site during windy conditions or providing containment to collect and store stormwater that may have become contaminated.

Mitigation Measure(s) for Impact HAZ-3: Release of Existing Contaminants from Sediments, Soils, or Groundwater

MM HAZ-3e. **Cleanup of Soil and Groundwater.** Soil contamination in OU 2 immediately adjacent to or within the proposed pipeline route is expected to be cleaned up by 2006 and certified as such by DTSC. The Applicant shall coordinate with DTSC to ensure that OU 2 has been certified as clean, to identify status of site-wide groundwater remediation for OU 7, and to determine whether additional surveys or screening level sampling should be conducted for areas to be disturbed by pipeline construction prior to any construction. To confirm that the appropriate level of coordination occurs with DTSC, the Applicant shall submit a letter detailing the status of the site and any specific measures that are to be conducted to USCG and CSLC, with a copy to DTSC, 60 days prior to initiating construction.

This impact is less than significant with the implementation of the measures identified above.

Impact HAZMAT-4: Release of Methane or Other Flammable or Toxic Gases from Nearby Landfills

Construction in the pipeline right-of-way (ROW) could release methane or other flammable or toxic gases from nearby landfills, causing potential health hazards to construction workers and the public; however, this potential impact is unlikely (Class III).

The nearest known landfill along the proposed Center Road Pipeline route is approximately 0.5 mile (0.8 km) from the proposed Ormond Beach odorization facility. The nearest known landfills along the Line 225 Pipeline Loop are approximately 0.9 mile (1.4 km) from the route. Consequently, there does not appear to be an impact associated with existing or abandoned landfills or any likelihood of a release of methane from drilling or trenching activities; therefore the potential impact is negligible.

Mitigation Measure for Impact HAZ-4: Release of Methane or Other Flammable or Toxic Gases from Nearby Landfills

No mitigation measures are identified; this impact would be less than significant.

Impact HAZMAT-5: Potential Hazardous Materials Spills due to Onshore Construction or Transportation

Activities associated with onshore construction and drilling could result in a temporary accidental spill of hazardous materials or oil (Class II).

Operation of the HDD equipment could result in the accidental release of hazardous materials. Chemicals associated with HDD include drilling detergents, oil well drilling additives, fluid loss reducers, grouting material, viscosifiers, wetting agents, gelling agents, shale inhibitors, stabilizers, anionic and nonionic surfactants, lubricants, and HDD fluids. Most of these materials are not considered regulated hazardous wastes. Any of these fluids or materials could be accidentally released during HDD construction and the impact could be significant, depending on the size of the spill.

Construction activities could also result in spills from accidents or improper handling or disposal of fuels or hazardous materials. Vehicle accidents could result in fuel spills from rupturing of fuel tanks, or hazardous materials spills could occur if hazardous material containers were compromised. A spill, if not handled according to Federal, State, and local regulations, could expose workers and the public to levels of hazardous materials in excess of OSHA and other applicable regulations. Improper handling or containment of hazardous materials stored on site also may result in spills to which the public or workers could be exposed.

An SPCC Plan would be prepared and approved prior to initiation of HDD operations. Before drilling begins, site workers would be trained to recognize and respond to spills in accordance with the SPCC Plan and to notify regulatory authorities. Construction crews would have an emergency spill kit containing sorbent pads and booms; equipment such as shovels, etc.; personal protective equipment; and emergency response guidance. The Applicant would submit the SPCC Plan to USCG and CSLC at least 60 days prior to beginning construction.

The Applicant would also prepare and implement a Storm Water Pollution Prevention Plan (SWPPP). The Plan would identify specific measures to be taken to ensure the proper management of hazardous materials and to appropriately respond to releases of hazardous materials. The SWPPP would be submitted to the Regional Water Quality Control Board, the USCG and the CSLC at least 60 days prior to beginning construction.

The following is incorporated into the proposed Project:

AMM HAZ-5a. **Spill Prevention Countermeasure and Control Plan.** An SPCC Plan would be prepared and approved prior to initiation of HDD operations. Before drilling begins, site workers would be trained to

recognize and respond to spills in accordance with the SPCC Plan and to notify regulatory authorities. Construction crews would have an emergency spill kit containing sorbent pads and booms; equipment such as shovels, etc.; personal protective equipment; and emergency response guidance. The Applicant would prepare the plan at least 60 days prior to beginning construction.

AMM HAZ-5b. **Use Best Management Practices.** The Applicant would maintain hazardous materials at the staging areas in proper storage containers and with sufficient secondary containment in accordance with best management practices and DOT, CalOSHA, and CalEPA requirements. Hazardous materials stored temporarily in staging areas would be stored on pallets within fenced and secured areas and protected from exposure to weather. Incompatible materials would be stored separately as appropriate. In addition, the Applicant would dispose of all hazardous wastes generated through construction or maintenance activities according to appropriate Federal and State regulations, depending on the type of waste generated.

AMM HAZ-5c. **Appropriate Disposal.** The Applicant would place absorbent material or drip pans beneath vehicles and equipment before maintenance or refueling. Any fluids drained from equipment would be collected in leak-proof containers and taken to an appropriate disposal or recycling facility.

AMM HAZ-5d. **Maintain Spill Kits.** The Applicant would keep a proper spill kit accessible at each construction location.

Mitigation Measure(s) for Impact HAZ-5: Potential Hazardous Materials Spills due to Onshore Construction of Transportation

MM HAZ-5e. **Maintain Equipment.** The Applicant shall maintain equipment in operating condition to reduce the likelihood of line breaks and leakage. Any vehicles with chronic or continuous leaks shall be removed from the construction site and repaired before being returned to operation.

Implementation of these mitigation measures would reduce the potential for spills and resulting impacts to a less than significant level.

Impact HAZMAT-6: Accidental Release of Drilling Muds During HDD

HDD could result in a temporary release of drilling muds from the borehole at a fracture in the ground (Class II).

A release of drilling muds could occur during the drilling of the pipeline tunnel from onshore. If a release of drilling muds were to occur, the drilled substratum would

fracture, releasing tens to hundreds of gallons of drilling muds into the subtidal nearshore environment. The potential effects on water quality and biota from a release of drilling muds or any other materials associated with HDD are described in Section 4.8, "Biological Resources - Terrestrial;" Section 4.9, "Biological Resources - Marine," and Section 4.14, "Water Quality and Sediments." If a release of drilling muds occurred, the impact could be significant.

Mitigation Measures for Impact HAZ-6: Accidental Release of Drilling Muds During HDD.

MM WAT-5a. **HDD Contingency Plan** applies here (see Section 4.18, "Water Quality and Sediments").

MM WAT-5b. **Strategic Location for Drilling Muds and Cuttings Pit** applies here (see Section 4.18, "Water Quality and Sediments").

With the implementation of these mitigation measures, the impact would be reduced to a less than significant level.

Impact HAZMAT-7: Potential Hazardous Materials Spills due to Onshore Operations

During onshore construction, operations, and maintenance activities, accidents or improper handling, transport, and storage of hazardous materials could result in spills, temporarily exposing workers or the public to hazardous materials (Class III).

Relatively small amounts of hazardous materials will be used during Project construction, operations, maintenance, and inspection activities. Small quantities of hazardous wastes, such as waste oil, would be generated during maintenance activities and could be spilled. The size of a potential spill would determine the potential impact.

The applicant has incorporated the following into the proposed Project:

The following also apply here:

AMM HAZ-5a. Spill Prevention Countermeasure and Control Plan.

AMM HAZ-5b. Use Best Management Practices.

AMM HAZ-5c. Appropriate Disposal.

AMM HAZ-5d. Maintain Spill Kits.

Mitigation Measures for Impact HAZ-7: Potential Hazardous Materials Spills due to Onshore Operations

MM HAZ-5e. **Maintain Equipment** also applies here.

With the implementation of these mitigation measures, the impact would be less than significant and no additional mitigation is identified.

Impact HAZMAT-8: Potential Disturbance or Detonation of Unexploded Ordnance due to Onshore or Offshore Construction

Offshore pipeline installation and onshore pipeline construction activities could encounter Unexploded ordnance, causing an explosion that, although temporary in nature, could result in serious injuries or fatalities to workers or the public, and—for offshore locations—serious injuries or fatalities to marine life from subsurface blast pressures (Class II).

Approximately 12.2 NM (14 miles or 22.5 km) of the subsea pipeline (i.e., from MP 3 to MP 17) will lie within the Point Mugu Sea Range. Although the pipeline route is proposed for an area where missiles are not ordinarily targeted, unexploded ordnance, drones, or other debris from missile testing may be located near or within the proposed subsea pipeline corridor. Onshore, the part of the proposed Loop 225 Pipeline route from about MP 0.35 to about MP 1.35 runs along the southern boundary of the Whittaker-Bermite cleanup site, where UXO has been identified as a site-wide concern.

Mitigation Measures for Impact HAZ-8: Potential Disturbance of Detonation of UXO due to Onshore or Offshore Construction

MM HAZ-8a. **Surveys.** For offshore pipeline installation within and near the Point Mugu Sea Range, the Applicant shall conduct surveys for visible and shallowly buried UXO that might be disturbed by pipeline installation.

MM HAZ-8b. **Coordination with the California Department of Toxic Substances Control.** For parts of the Loop 225 Pipeline route on or near the Whittaker-Bermite site, the Applicant shall coordinate with the DTSC before any surveys or construction activities to determine whether additional UXO surveys would be warranted and shall ensure that those surveys are conducted if deemed necessary. The Applicant shall submit a letter to CSLC and USCG with a copy to DTSC documenting the outcome of coordination and the status of follow-up 60 days prior to beginning construction.

Implementation of these mitigation measures would reduce impacts to less than significant.

4.12.5 Alternatives

4.12.5.1 No-Action Alternative

Under this alternative, the license application would not be approved, the Project would not proceed, and existing conditions would prevail.

4.12.5.2 Alternative Deepwater Port (DWP) Location - Santa Barbara Channel/Mandalay Shore Crossing/Gonzales Road Pipeline

There are no charted ocean dumpsites within 0.5 mile (0.8 km) of the proposed Santa Barbara Channel/Mandalay Shore Crossing/Gonzales Road Pipeline Alternative (NOAA 2003b). Offshore impacts would be similar to those of the proposed route. Since the alternative pipeline route would be shorter in length, construction time would be reduced; therefore, the overall risk of a potential spill would decrease.

This alternative includes the HDD installation of approximately 1.4 miles (2.3 km) of piping to make the shore crossing, compared to between 0.85 and 0.95 mile (1.4 and 1.5 km) for the proposed route. This would result in an increase in the amount of HDD to be performed and increase the potential for a release of drilling muds. Therefore, the impact potential is greater than for the proposed route.

4.12.5.3 Alternative Onshore Pipeline Routes

Center Road Pipeline Alternative 1

The database search identified 52 sites located within 0.5 mile (0.8 km) of the Alternative 1 route. Given the increased number of potential hazardous material and waste sites compared to the proposed route, there would be a greater potential to encounter contaminated soil or water during construction than with the proposed route. The impacts from the use, storage, and transport of hazardous materials on this route would be the similar to the proposed route.

Center Road Pipeline Alternative 2

Seventeen hazardous materials or hazardous waste sites were identified within 0.5 mile (0.8 km) of the Center Road Pipeline Alternative 2 route. This is more than twice the number identified along the proposed route; therefore, there would be a slightly greater potential to encounter contaminated soil or water during construction. The impacts from the use, storage, and transport of hazardous materials on this route would be similar to the proposed route.

Line 225 Pipeline Loop Alternative

The Line 225 Pipeline Loop Alternative crosses within 0.5 mile (0.8 km) of an additional four potential hazardous waste sites; therefore, there would be a slightly greater potential to encounter contaminated soil or water during construction than with the proposed route. The impacts from the use, storage, and transport of hazardous materials on this route would be similar to the proposed route.

4.12.5.4 Alternative Shore Crossing/Pipeline Routes

Point Mugu Shore Crossing/Casper Road Pipeline

This alternative shore crossing and approximately 1 mile (1.6 km) long pipeline route lie within 0.5 mile (0.8 km) of two sites with known contamination from leaking underground storage tanks: Marabi Farms at 2292 Hueneme Road and the Verizon Mugu Central Office at 2463 Hueneme Road. The potential to encounter contaminated soil or water during construction for this alternative would not be markedly different from the proposed route.

Arnold Road Shore Crossing/Arnold Road Pipeline

This alternative shore crossing and approximately 1 mile (1.6 km) long pipeline route lie within 0.5 mile (0.8 km) of a single site with known contamination, the Del Norte Foods site at 6859 Arnold Road, compared to the two known sites for the proposed shore crossing at Ormond Beach and the first 1.5 miles (2.4 km) of the proposed pipeline. However, the Arnold Road Dump is located at the end of Arnold Road, which may increase the potential to encounter contaminated soil or water during construction than with the proposed route. The dump was closed in 1960 (SWIS 2004).

4.12.6 References

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2 Management Board. http://www.ciwmb.ca.gov/SWIS/Search.asp#DOWNLOAD, last
3 update June 17, 2004.

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